

**Remarks**

Claims 1-12 and 14 are pending herein. Claims 4 and 10 are withdrawn from further consideration as being drawn to non-elected inventions, there being no allowable generic or linking claim. Claims 6, 11 and 14 are withdrawn from further consideration as being drawn to a non-elected species, there being no allowable generic or linking claim.

By this Amendment, claim 1 has been amended to delete alkyl(meth)acrylate homopolymers as one of the materials which can constitute the core of the core-shell copolymer (A).

In the Office Action, claims 1-3, 5, 7-9 and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Kokai Patent Application No. 62-285947 ("JP '947").

In view of the amendments and remarks herein, Applicants respectfully request reconsideration and withdrawal of the rejection set forth in the Office Action.

**I. The Rejection**

Claims 1-3, 5, 7-9 and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over JP '947.

JP '947 is cited for teaching:

a thermoplastic polyester composition comprising a thermoplastic component consisting of a thermoplastic polyester and an impact modifier consisting of an epoxy group containing copolymer that can be an ethylene/unsaturated epoxide copolymer and a graft copolymer that can be polyacrylate core/methylmethacrylate shell graft copolymer. See the translation at pages 15-16 where ethylene/unsaturated epoxide copolymer and polyacrylate core/methylmethacrylate shell graft copolymer are exemplified. Each of the epoxy group containing copolymer and the graft copolymer is used in amounts of 1-80 part per 100 parts of polyester. See the translation at page 3, last paragraph. The examples include combinations of epoxy group containing copolymer and core-shell copolymer in ratios of 40/60 to 10/90. (Office Action, pages 2-3)

According to the Office Action:

it would have been obvious to add a combination of an ethylene/unsaturated epoxide copolymer and a polyacrylate/methylmethacrylate core-shell copolymer in a ratio of 40/60 to 10/90 to a thermoplastic polyester in order to obtain an impact modified thermoplastic polyester composition. Further, it would have been obvious to add a combination of an ethylene/unsaturated epoxide copolymer and a polyacrylate/methylmethacrylate core-shell copolymer in an amount of greater than 40% to a thermoplastic polyester in order to obtain an impact modified thermoplastic polyester composition. With the exception of claim 9, the claims do not require any specific ratio of ethylene/unsaturated epoxide copolymer to core-shell copolymer when the impact modifier is used in amounts of greater than 40%. (Office Action, page 3)

Applicants respectfully submit that claims 1-3, 5, 7-9 and 12 would not have been obvious over JP '947.

According to the Office Action, JP '947 teaches that the graft copolymer therein can be a polyacrylate core/methylmethacrylate shell graft copolymer. Applicants are unable to determine whether the rubbery graft copolymers recited on pages 15-16 are core/shell copolymers or the contents of such copolymers. Therefore, Applicants' arguments herein are based on the assumption that the only core/shell copolymers disclosed in JP '947 are polyacrylate core/methylmethacrylate shell graft copolymers.

By this Amendment, claim 1 has been amended to exclude alkyl(meth)acrylate homopolymers from the list of materials which can serve as the core in the core-shell copolymer (A). Thus, amended claim 1 recites that the core consists of one or more polymers selected from the group consisting of isoprene homopolymers, butadiene homopolymers, copolymers of isoprene with at most 30 mol% of a vinyl monomer, copolymers of butadiene with at most 30 mol% of a vinyl monomer, and copolymers of alkyl (meth)acrylate with at most 30 mol% of a vinyl monomer, wherein the vinyl

monomer in the core is selected from the group consisting of a styrene, an alkylstyrene and an alkyl (meth)acrylate.

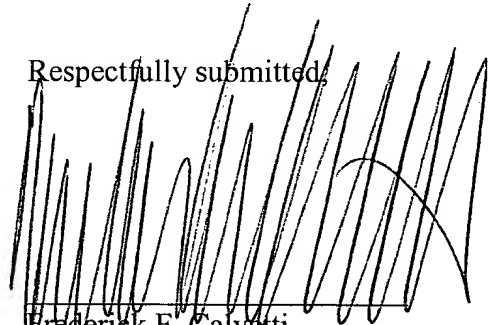
Applicants respectfully submit that JP '947 does not teach or suggest that the core of the core-shell copolymer therein may contain any of the materials recited in instant claim 1 as useful for the core of the core-shell copolymer (A). Thus, Applicants submit that JP '947 would not have made it obvious to use any of these materials as the core in core-shell copolymer (A).

Therefore, for at least the foregoing reason, Applicants respectfully submit that instant claims 1-3, 5, 7-9 and 12 would not have been obvious over JP '947.

## **II. Conclusion**

In view of the foregoing amendment and remarks, Applicants respectfully request that the rejection of claims 1-3, 5, 7-9 and 12 be withdrawn and that these claims be allowed.

Respectfully submitted,



Frederick F. Calvetti  
Reg. No. 28,557

Date: August 28, 2003

SMITH, GAMBRELL & RUSSELL, LLP  
1850 M Street, N.W.  
Suite 800  
Washington, D.C. 20036  
Telephone: (202) 263-4300  
Facsimile: (202) 263-4329

199185

### LISTING OF CLAIMS

Claim 1. (Currently Amended): Thermoplastic polyester compositions comprising, by weight:

- (i) a thermoplastic component consisting of a thermoplastic polyester; and
- (ii) an impact modifier consisting of:

- (a) a core-shell copolymer (A); wherein the core consists of one or more polymers selected from the group consisting of isoprene homopolymers, butadiene homopolymers, copolymers of isoprene with at most 30 mol% of a vinyl monomer, copolymers of butadiene with at most 30 mol% of a vinyl monomer, ~~alkyl (meth)acrylate homopolymers~~, and copolymers of alkyl (meth)acrylate with at most 30 mol% of a vinyl monomer, the vinyl monomer in the core being selected from the group consisting of a styrene, an alkylstyrene and an alkyl (meth)acrylate; further wherein the shell consists of one or more polymers selected from the group consisting of styrene homopolymers, alkylstyrene homopolymers, methyl methacrylate homopolymers, and copolymers consisting of at least 70 mol% of a styrene, alkyl styrene or methyl methacrylate with at most 30 mol% of a vinyl acetate; and

- (b) an ethylene copolymer (B) chosen from ethylene-unsaturated epoxide copolymers (B2);

- (iii) the (B)/(A) ratio being between 40/60 and 10/90 for proportions of impact modifier between 18 and 40% in 82 to 60% of polyester, respectively;

- (iv) the (B)/(A) ratio being between 40/60 and 25/75 for proportions of impact modifier between 2 and 18% in 98 to 82% of polyester, respectively.

Claim 2 (Previously Amended): Compositions according to Claim 1, wherein the polyester is selected from PET and PBT.

Claim 3 (Previously Amended): Compositions according to Claim 1, comprising up to 30 parts by weight of copolyetherester per 100 parts of thermoplastic polyester.

Claim 4 (Previously Amended; Withdrawn): Compositions according to Claim 1, comprising up to 30 parts by weight of polycarbonate per 100 parts of thermoplastic polyester.

Claim 5 (Previously Amended): Compositions according to Claim 1, wherein the copolymer (A) comprises an elastomer core and at least one thermoplastic shell.

Claim 6 (Previously Amended; Withdrawn): Compositions according to Claim 1, wherein the copolymers (B1) are ethylene-alkyl (meth)acrylate-maleic anhydride copolymers which comprise from 0.2 to 10% by weight of maleic anhydride and from 0 to 40% by weight of alkyl (meth)acrylate.

Claim 7 (Previously Amended): Compositions according to Claim 1, wherein the ethylene-unsaturated epoxide copolymers (B2) are ethylene-alkyl (meth)acrylate-unsaturated epoxide copolymers obtained by copolymerization of the monomers and contain from 0 to 40% by weight of alkyl (meth)acrylate and up to 10% by weight of unsaturated epoxide.

Claim 8 (Previously Amended): Compositions according to Claim 1, comprising, per 100 parts by weight, 75 to 95 parts of polyester for 25 to 5 parts of impact modifier, respectively.

Claim 9 (Previously Amended): Compositions according to Claim 1, wherein the proportions of (A) and (B) are that the (B)/(A) ratio is between 40/60 and 25/75, whatever the amount of impact modifier in the polyester.

Claim 10 (Previously Amended; Withdrawn): Impact-modifier compositions comprising:

(a) a core-shell copolymer (A);

(b) an ethylene copolymer (B) selected from ethylene-unsaturated carboxylic acid anhydride copolymers (B1), ethylene-unsaturated epoxide copolymers (B2) and blends thereof;

the (B)/(A) ratio being between 40/60 and 10/90 for proportions of impact modifier between 18 and 40% in 82 to 60% of polyester, respectively,

the (B)/(A) ratio being between 40/60 and 25/75 for proportions of impact modifier between 2 and 18% in 98 to 82% of polyester, respectively, and advantageously between 5 and 18% in 95 to 82% of polyester, respectively.

Claim 11 (Previously Added; Withdrawn): Compositions according to Claim 6, wherein the amount of alkyl (meth)acrylate is 5 to 40% by weight.

Claim 12 (Previously Added): Compositions according to claim 1, wherein the compositions consist of the thermoplastic polyester and the impact modifier.

Claim 13 (Cancelled)

Claim 14 (Previously Added; Withdrawn): A thermoplastic polyester composition comprising, by weight:

(i) a thermoplastic polyester; and

(ii) an impact modifier comprising:

(a) a core-shell copolymer (A); wherein the core consists of one or more polymers selected from the group consisting of isoprene homopolymers, butadiene homopolymers, copolymers of isoprene with at most 30 mol% of a vinyl monomer, and copolymers of butadiene with at most 30 mol% of a vinyl monomer, the vinyl monomer in the core being a styrene or an alkylstyrene; further wherein the shell consists of one or more polymers selected from the group consisting of styrene homopolymers, alkylstyrene homopolymers and copolymers consisting of at least 70 mol% of a styrene or an alkyl styrene with at most 30 mol% of a vinyl acetate; and

(b) an ethylene copolymer (B) chosen from ethylene-unsaturated carboxylic acid anhydride copolymers (B1); wherein the (B1)/(A) ratio is between 40/60 and 10/90 for proportions of the impact modifier between 18 and 40% by weight of the thermoplastic polyester composition, further wherein the (B1)/(A) ratio is between 40/60 and 25/75 for proportions of the impact modifier between 2 and 18% by weight of the thermoplastic polyester composition.